

Application Number 10/722,628
Amendment Dated January 13, 2006
Reply to Office action of September 13, 2005

REMARKS/ARGUMENTS

The Examiner has issued an objection to the drawings but has nowhere set forth reasons for such objection. Applicant is unable to respond appropriately by providing formal drawings until the gist of the objection is known.

Once advised, Applicant will provide formal drawings.

The Examiner has rejected claims 2 and 11 under 35 USC 112, 2nd paragraph, as being indefinite for use of terms "preferred" and "preferably" therein, respectively.

It is believed the amendment to the claims renders this rejection moot.

Claims 1, 2, and 8-11 are next rejected under 35 USC 103(a) as unpatentable over Moen '121 in view of Nambu or Takano et al.

The Examiner's rejection is traversed.

The field of the Nambu and Takano et al patents is dissimilar from that of the present application, as now better defined in the claims. Both Nambu and Takano et al. refer to controlling valves for gaseous fluids. The present invention is limited to the balance of liquid water of equal content but dissimilar temperature.

Here see The Anderson Company et al. v. Trico Products Corporation, 162 F.Supp. 224, 118 USPQ 490 (DC WNY 1958)

"... it is noted that patent is limited on its face by its title; hence, claims must be construed with some strictness."

The Takano et al patent describes a device that does not facilitate fluid flowing through the device, except to vent over-pressure gas from one side of the system in extreme fluctuation and is peripheral to the flow system. The described device uses volumetric fluctuation to compensate for momentary barometric deviance without any limitation to the actual flow of the fluid being controlled. The present device is actually in-line with the system and actively moderates the flow of the fluids passing therethrough, based on pressure differentials that may be experienced in the flow of the two fluids being compared.

The Takano et al's patent discussion of equilibrating pressure for gases appears to apply only to a predetermined ratio of pressure and/or flow of two gasses that is not necessarily equal. The preferred embodiment shows and discusses a differential in the assembled accumulation chambers comprising the device. Therefore, the pressure and/or flow between the two fluids being comparatively regulated must be dissimilar at a geometric ratio of the differential in size of the two pressure chambers. Those skilled in the art understand that the water supply delivered to the present device will be of equal size and,

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therefore, equal volumetric capacity. The spool in the present device is necessarily the exact same size perpendicular to the lateral axis on both sides of the accumulation chamber to equalize both pressure and volumetric flow through the device.

The Nambu patent describes a device that uses an internal spool to regulate flow of a gas through the device. However, regulation is accomplished by the use of an adjustable spring, a regulating reference fluid and a complex external control system for the regulation of the reference fluid that is peripheral to the process being regulated. The present device contains a spring that has no impact on the regulation of process flow. Furthermore, the present device uses the two flows of process fluid to regulate each other in barometric comparison, without any external control system. Additionally the nature of the present device is such that it eliminates the need for any adjustment to achieve volumetric equalization.

The Nambu device is designed to adjust the pressure of a singular fluid based on the adjustment of external control devices. The present device is designed to comparatively regulate the flow of two fluids in equal volumetric delivery.

It is believed that the specific claims are patentable under the following considerations:

Claims 1-2 and 8-11 describe the use of a highly lubricitous

plastic resin such as PTFE. Existing general data as well as close examination of similar devices that have failed under use show us that hot water can act as a solvent on many plastic resins over extended time. PTFE compounds are designed to be processed and used at elevated temperatures such as may be experienced in a water mixing valve where the present device is employed. The use of a PTFE type compound in our proposed application eliminates the thermal degradation issues observed in current products. Thermal degradation has not been discussed in any of the prior art.

The lubricity of the material discussed in claims 1-2 and 8-11 is employed differently than the previously referenced patents describe. Due to the relatively small size of the moving part(s) and relatively slow period of fluctuation of the water supply the present device would reasonably be expected to experience, frictional co-efficients of the moving parts which are considered to be insignificant to the operation of the device. The loss of function due to friction between the moving parts of the present device is not considered to be of concern. The lubricity of the device components is relevant in our device to the build up of debris and deposits on the constituent components. Common to water supplies, both municipal and private, is a certain amount of minerals in aqueous solution. These minerals will precipitate

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out of solution and chemically bond to most types of stationary surfaces over time. The amount and interval of build up is variable based on the quality of water supplied. Examination of similar devices that have failed under use teach us that the preferred materials discussed in the present application patent significantly discourage the build up of such deposits and greatly enhance the longevity of operation of our device.

Once again, due to the relatively small size of the moving part(s) and relatively slow period of fluctuation of the water supply the present device would reasonably be expected to experience in operation, the mass or weight of the moving parts is not considered to be of any significant importance to the function of the device. The advantages of lower weight of the plastic resin components compared to metal components discussed in the prior art are related to the cost and manufacturing considerations.

With respect to the Moen '121 patent, the Examiner acknowledges that the Moen patent does not show use of a plastic sleeve and/or spool, but rather use of stainless steel or the like. This patent teaches away from applicant's disclosure herein. Here see Diversitech Corp., v. Century Steps, Inc., 850 F.2d 675, 7 USPQ2d 1315 (Fed. Cir. 1988)

"The district court erred in finding the claims of the

patent, which covered a load-bearing pad for heavy equipment having a foam core with a cement coating on the top and sides only to enable the pad to conform to uneven ground and to allow stacking, invalid for obviousness. "There was no suggestion in the prior art of the results achieved by the ... invention."

Further, there is no motivation, suggestion or teaching in any of the patents combined by the Examiner in this rejection to make such combination, most particularly because the Moen device is distinct from that of Nambu or Takano et al. by dealing with mixing of hot and cold water rather than dealing with mixing of gases.

Since there is no motivation to combine, this rejection cannot stand.

Here see Diversitech Corp., v. Century Steps, Inc., 850 F.2d 675, 7 USPQ2d 1315 (Fed. Cir. 1988)

"The problem confronted by the inventor must be considered in determining whether it would have been obvious to combine references in order to solve that problem."

The Examiner next rejects claims 3-7 and 12-13 under 35 USC 103(a) as being unpatentable over Moen '121 in view of Nambu or Takano et al as applied above, further in view of Powers et al.

This rejection is traversed.

Applicant first reiterates the argument regarding the combination of Moen '121 with Nambu or Takano et al set forth above.

Secondly, the examiner has apparently misconstrued the function of applicant's spring.

In this respect, claims 3-7 and 12-13 relate to the spring employed in the present device. All prior art references describe the use of a spring actively employed in the control of the flow regulation. The spring in the present device has no involvement in the flow regulation function of the device. It is foreseeable that under extreme circumstance, imbalance in pressure from one supply could cause the plastic regulating spool to rapidly traverse to the extreme end of the balancing chamber. This rapid traverse could cause the spool to impact the metal stem portion of the device with such force as to damage the spool and negatively affect the spool's ability to function properly. The spring is employed as a shock absorbing device to protect the spool from potential damage. The spring has no capability to effect the regulation of flow within the balancing cartridge. Additionally, the expansion and contraction of the spring creates the ability to mechanically break down particles of precipitated minerals and other debris such that they would be too small to

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interfere with the function of the device, significantly
prolonging it's functional life.

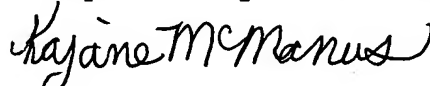
Thus, the spring of Powers et al can in no way be construed
as "equivalent" to applicant's spring and the rejection is
believed to be rendered moot. Here see In re Lee, 39 CCPA 752,
193 F.2d 186, 92 USPQ 131 (CCPA 1951)

(1) "None of the cited references shows the full
equivalent of the combination defined by those five
claims. Also the basic reference, Holstein, known in
the art as having a shaker conveyer operates on a
different principle from that claimed by appellant.

The basic and secondary references, although somewhat
analogous, contain no suggestion as to how an operative
combination could be accomplished...."

An earnest endeavor has been made to place the application
in condition for allowance and an early action to that end is
respectfully awaited.

Respectfully submitted,



Kajane McManus
Reg. No. 31,642

1505 Ashley Court
Woodstock, Illinois 60098
815/337-7770